SONY

3-235-455-11(1)

Portable MiniDisc Recorder

Operating Instructions GB
Manual de instrucciones ES
Инструкция по эксплуатации RU

MDLP

MZ-B100

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Owner's Record

The serial number is located at the rear of the disc compartment lid and the model number is located at the top and bottom. Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.
Model No. MZ-B100
Serial No. _____

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

— Reorient or relocate the receiving antenna.
— Increase the separation between the equipment and receiver.
— Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
— Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Caution

The use of optical instruments with this product will increase eye hazard.

CAUTION — INVISIBLE LASER RADIATION WHEN OPEN

AVOID EXPOSURE TO BEAM

Information

IN NO EVENT SHALL SELLER BE LIABLE FOR ANY DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE, OR LOSSES OR EXPENSES RESULTING FROM ANY DEFECTIVE PRODUCT OR THE USE OF ANY PRODUCT.

Certain countries may regulate disposal of the battery used to power this product. Please consult with your local authority.

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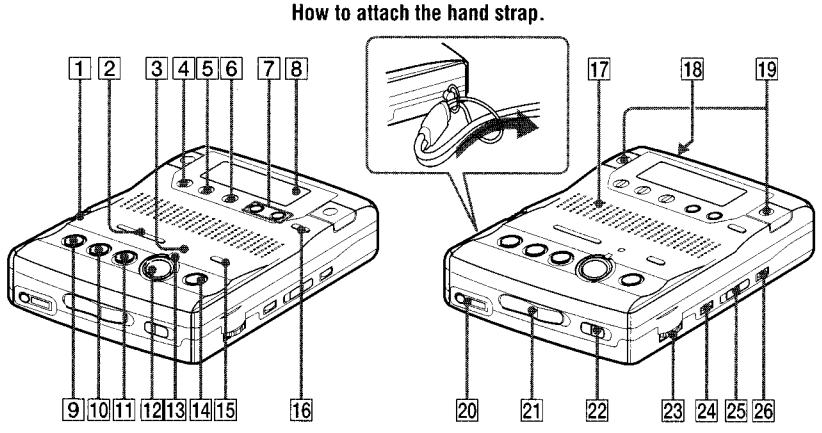
Looking at the controls

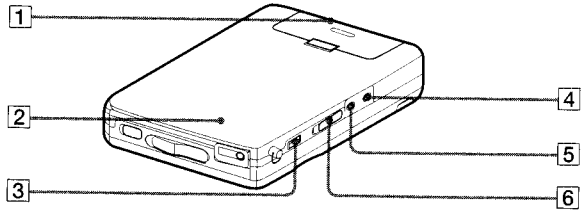
See pages in ( ) for more details.

Front of the recorder



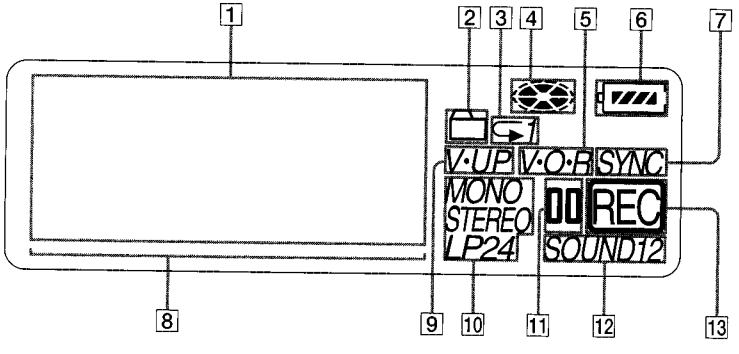
1 SPEED CONTROL dial (28)
2 ⏮REVIEW/AMS/⏭CUE/AMS (search /AMS) buttons (12) (15) (23) (25) (31) (33) (34) (41)
3 VOR indicator (17)
4 DISPLAY button (26) (29) (35)
5 PLAY MODE button (29) (35)
6 EDIT/ENTER button (31) (34) (41)
7 EASY SEARCH +/– buttons (28) (35)
8 Display window (24) (27) (33)
9 ■STOP button (12) (14) (25) (35)
10 ►PLAY (play) button (12) (14) (25) (34)
The ►PLAY button has a tactile dot.
11 ❚❚PAUSE button (13) (15) (33) (34)
12 ●REC button (12) (16)
13 REC indicator (12) (26)
14 TRACK MARK button (32) (33)
15 REC MODE switch (12) (16)
16 GROUP button (23) (30) (37)
17 Speaker (14)
18 DC IN 3V jack (43)
19 Microphones (12) (17)
20 ∩ (headphones) jack (12) (14)
21 OPEN switch (11) (14)
22 HOLD switch (9) (41)
23 VOL control (14)
The VOL control has a tactile dot.
24 VOR button (17)
25 SYNCHRO REC ON/OFF switch (24)
26 ERASE button (39)

Back of the recorder



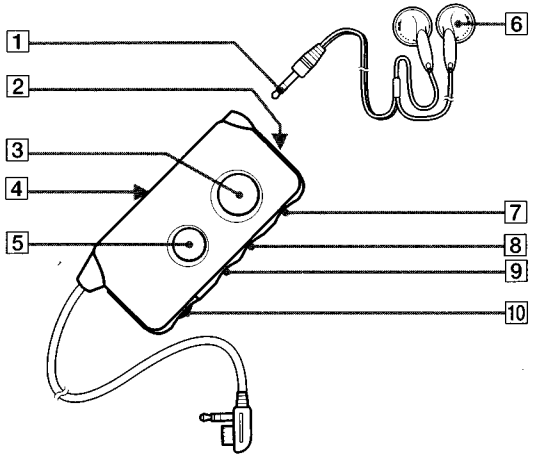
1 Battery compartment (9)
2 CLOCK SET button (25)
3 SOUND button (27)
4 LINE IN (OPTICAL) jack (20) (21)
5 MIC (PLUG IN POWER) jack (18)
The MIC (PLUG IN POWER) jack has a tactile dot.
6 MIC SENS (H/L) switch (11) (17)

The display window



1 Character information display (16) (27) (33)
Displays the disc and track names, date, error messages, track numbers, recording level, etc.
2 Group indication (23) (30) (35)
3 Play mode indication (29)
4 Disc indication (16) (27) (33)
Shows that the disc is rotating for recording, playing or editing an MD.
5 VOR indication (17)
6 Battery level indication (42)
7 SYNC (synchro-recording) indication (24)
8 Playback level meter (30) (33)
9 V-UP indication (27)
10 STEREO (stereo), LP2 (LP2 stereo), LP4 (LP4 stereo), MONO (monaural) indication (12) (16)
11 Pause indication
12 SOUND indication (27)
13 REC indication (12)

The remote control



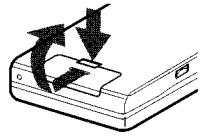
1 Stereo mini plug
2 SOUND button (27)
3 TRACK MARK button (32) (33)
4 HOLD switch (9) (41)
Slide to lock the controls of the remote control.
5 ⏸ (pause) button (15)
6 Headphones
7 ■ (stop) button (14)
8 ⏭/⏮ buttons (15)
The ⏭/⏮ button has a tactile dot.
9 ⏮ REVIEW/AMS (15)
10 VOL control (14)
The VOL control has a tactile dot.

Preparing a power source

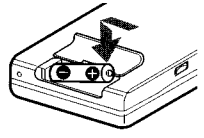
This section explains how to prepare the recorder for battery-powered operation. For information on connecting the recorder to an AC power outlet, see page 43.

1 Insert dry batteries.

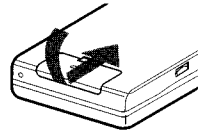
Back of the recorder



Press and slide the battery compartment lid as shown in the illustration.



Insert one LR6 (size AA) alkaline dry battery (supplied with the world model only).

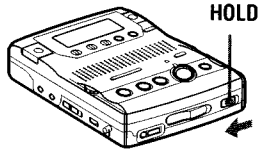


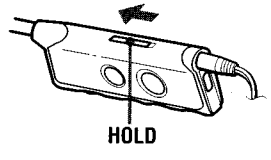
Close the lid.

Notes

- Do not use manganese dry battery. If you do, recording may not be possible.
- Insert the ⊕ and ⊖ poles of the battery correctly as shown on the recorder.

2 Unlock the control.





Slide HOLD to the direction of the arrow in the illustration.

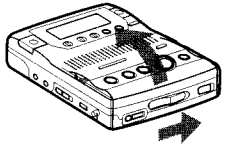
Charging the built-in battery for the clock

When you use the recorder for the first time or after a long period of disuse, charge the built-in battery for the clock. After setting the clock, leave the dry batteries installed for about more than two hours so that the built-in battery is automatically charged. You can use the recorder while charging. When the built-in battery is charged, the settings, such as clock, will remain for about one month after dry batteries are taken out. For details on setting a clock, see page 25.

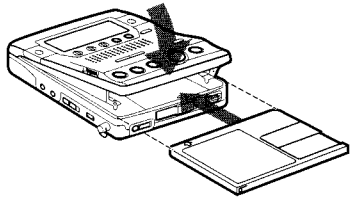
Recording an MD right away!

Use the built-in microphones to record in stereo. Make sure the record-protect tab on the disc is closed (page 54). The use of new alkaline dry battery is recommended. The recording may not be possible if you use manganese dry battery.

1 Insert a recordable MD.

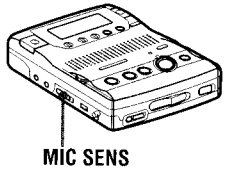


① Slide OPEN to open the lid.



② Insert a recordable MD with the label side facing up, and press down on the lid (at the center of the front edge as shown above) to close it firmly.

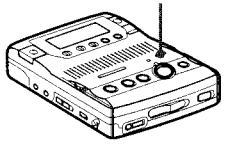
2 Select the microphone sensitivity.



① Slide MIC SENS to H or L.

MIC SENS	When
H (high)	recording a soft or a sound in the distance (e.g. to record a meeting).
L (low)	recording a laud or a sound at close range (e.g. to record a speech through a microphone).

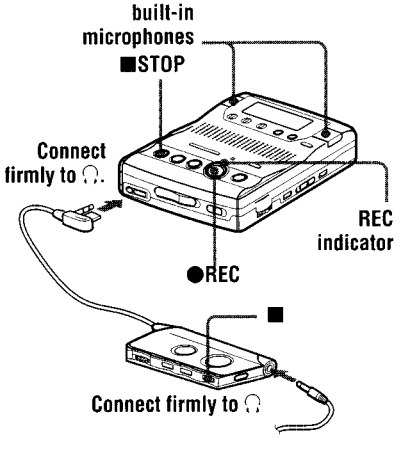
3 Select the recording mode.



① Press REC MODE repeatedly until "STEREO" lights up in the display.

You can select normal stereo, LP2 stereo, LP4 stereo, or monaural as the recording mode. For details, see "Recording for long times" (page 16). The factory setting is normal stereo.
The recording mode cannot be changed when recording is in progress.

4 Record an MD.



① Press ●REC.

"REC" appears, REC indicator lights up, and then recording starts.
You can monitor the recording conditions, such as the recording position, through the display or the REC indicator (page 26).
If the disc is blank, the recording starts from the beginning. If the disc is partially recorded, the recording automatically starts from the end of the existing material.

To stop recording, press ■STOP.

After you press the ■STOP button to stop the recorder, the recorder will automatically turn off after about 10 seconds (when using an alkaline dry battery) or 5 minutes (when using the AC power adaptor).

To monitor the sound during recording.

Connect the supplied headphones with remote control to the ∩ jack. You can adjust the volume by turning the VOL control. This adjustment does not affect the recording level since the level is adjusted automatically.

To	Operation
Record partway through the previous recording	Press ►PLAY, ►►ICUE/AMS or I◄◄ REVIEW/AMS to find the beginning of the material to be recorded, and then press ❚❚PAUSE. Press ●REC so that the recorder changes to recording pause. Press ❚❚PAUSE again to start recording.
Pause[1]	Press ❚❚PAUSE while recording. Press ❚❚PAUSE again to resume recording.
Remove the MD	■STOP to stop recording and open the lid. (Be sure that "TOC Edit" has disappeared from the display before opening the lid.)

[1] The REC indicator flashes during recording pause. Track marks are not added while recording with microphones, even when the recorder is paused.

If the recording does not start

- Make sure the recorder is not locked (pages 9 and 41).
- Make sure the MD is not record-protected (page 54).
- Premastered MDs cannot be recorded over.

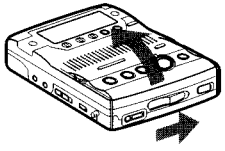
Notes

- For long recordings, it is recommended that you power the recorder from a house current using an optional AC power adaptor AC-E30HG (page 43).
- Do not connect an optional AC power adaptor during a recording operation if you are operating the recorder on battery power. If you do, the material recorded up to that point will not be saved to the disc
- The lid will not open during recording or until "TOC Edit" disappears from the display after the recording has completed.
- If the power supply is disrupted (i.e. the batteries are removed or becomes exhausted or the optional AC power adaptor is disconnected) during a recording operation, or while "TOC Edit" appears in the display, then it will not be possible to open the lid until power is restored.
- "Data Save" or "TOC Edit" flashes while data of the recording (the track's start and end points, etc.) is being recorded. Do not move or jog the recorder or disconnect the power source while the indication is flashing in the display. If you do, the material recorded up to that point will not be saved to the disc.
- When you record through the microphones, the various sounds made by the recorder may also be recorded.
- The built-in microphones do not operate whenever an optional microphone is connected into the MIC (PLUG IN POWER) jack on the recorder.
- The built-in microphones do not operate whenever an optical cable or a line cable is connected into the LINE IN (OPTICAL) jack on the recorder.

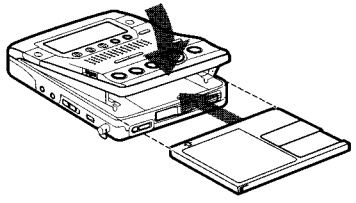
Playing an MD right away!

You can play recordable MDs or premastered MDs. Sound output from the built-in speaker is monaural, but stereo listening is possible through the supplied headphones with a remote control.

1 Insert an MD.

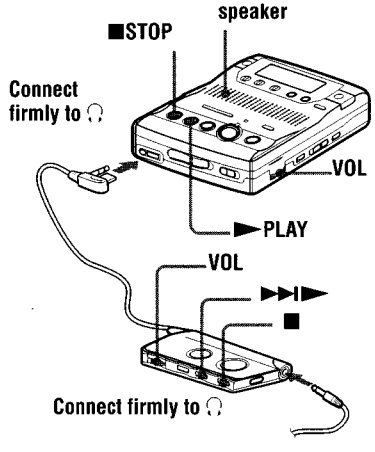


① **Slide OPEN to open the lid.**



② **Insert an MD with the label side facing up, and press down on the lid (at the center of the front edge as shown above) to close it firmly.**

2 Play an MD.



① **Press ►PLAY.**

② **Turn VOL to adjust the volume.**
The volume will be shown in the display.

To stop play, press ■STOP.
Playback starts from the point you last stopped playing. To start playback from the beginning of the disc, press ►PLAY for 2 seconds or more on the recorder, or press ►►I► for 2 seconds or more on the remote control.
After you press the ■STOP button to stop the recorder, the recorder will automatically turn off after about 10 seconds (when using an alkaline dry battery), or 5 minutes (when using the AC power adaptor).
On the remote control, use the ►►I► button to start playback, the ■STOP button to stop the recorder, and the VOL control to adjust the volume. If you are using the remote control, you will hear short beeps whenever you press the ►►I► button, and a long beep whenever you press the ■STOP button.

To listen in stereo
Connect the supplied headphones with a remote control to the ∩ jack on the recorder.

To	Operation on the recorder	Operation on the remote control (Beeps in the headphones)
Find the beginning of the current track or a previous track[1]	Press I◄◄ REVIEW/AMS. Press I◄◄ REVIEW/AMS repeatedly until you reach the beginning of the desired track.	Press I◄◄. (Three short beeps) Press I◄◄ repeatedly until you reach the beginning of the desired track.
Find the beginning of the next track[2]	Press ►►ICUE/AMS.	Press ►►I►. (Two short beeps)
Pause	Press ❚❚PAUSE. Press ❚❚PAUSE again to resume play.	Press ❚❚ on the remote control. (Continuous short beeps) Press ❚❚ again to resume play.
Go backwards while playing	Press and hold I◄◄ REVIEW/AMS.	Press and hold I◄◄.
Go forward while playing	Press and hold ►►ICUE/AMS.	Press and hold ►►I►.
Remove the MD	Press ■STOP and open the lid.[3]	Press ■. (One short beep)

[1] If you press I◄◄ REVIEW/AMS during the first track of the disc, the recorder goes to the beginning of the last track on the disc.
[2] If you press ►►ICUE/AMS during the last track of the disc, the recorder goes to the beginning of the first track on the disc.
[3] Once you open the lid, the point to start play will change to the beginning of the first track.

If the play does not start
Make sure the recorder is not locked (pages 9 and 41).

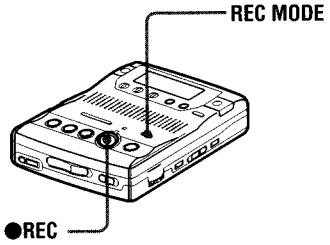
To locate a point quickly
Use the EASY SEARCH +/– buttons (page 28).

Playback will switch automatically between stereo and monaural according to the sound source.

Notes
- The sound may skip during playback when the recorder is exposed to continuous vibration, such as while jogging.
- If the power supply is disrupted (i.e. the batteries are removed or become exhausted or the optional AC power adaptor is disconnected) when the recorder is operating, the lid may not open until the power is restored.

Recording for long times

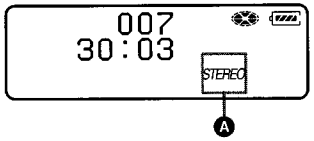
Select each recording mode according to the recording time that you want.
Stereo recording is possible at 2 times (LP2) or 4 times (LP4) the normal (stereo) recording time. Monaural recording at 2 times normal recording speed is also possible.
MDs recorded in monaural, LP2 stereo, or LP4 stereo mode can be played back only on MD players or recorders with monaural, LP2 stereo, or LP4 stereo playback mode.



1 Insert a recordable disc.

2 Press REC MODE repeatedly until desired recording mode lights up in the display.

Each time you press the button, Ⓐ changes as follows.



Recording mode[1]	Ⓐ	Recording time[3]
Stereo	STEREO	approx. 80 min.
LP2 stereo	LP2	approx. 160 min.
LP4 stereo	LP4	approx. 320 min.
Monaural[2]	MONO	approx. 160 min.

[1] For better sound quality, record in normal stereo or LP2 stereo mode.
[2] If you record a stereo source in monaural, the sounds from left and right will be mixed.
[3] When using an 80-minute recordable MD

3 Press ●REC.

For other operations on recording, see "Recording an MD right away!" (page 11).

To stop recording, press ■.

The recorder switches back to stereo recording when you record the next time.

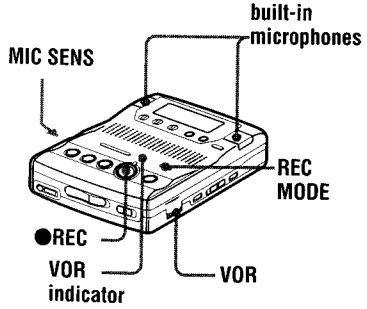
- Audio components that support the LP2 stereo or LP4 stereo modes are indicated by the MDLP or MDLP logo marks.
- The recording mode can be changed during recording pause. When you change the recording mode, a track mark is automatically added at that point.

Notes

- "LP:" will be added at the beginning of the track name of a track recorded in MDLP mode.
- It is recommended that you use the supplied AC power adaptor for long recordings.
- During monaural recording of a stereo sound source connected through the digital (optical) input jack, you can still monitor the recorded sound in stereo by using headphones or earphones connected to the ∩/LINE OUT jack.
- When you record in LP4 mode, momentary noise may be produced on very rare occasions with certain sound sources. This is because of the special digital audio compression technology that enables a recording time 4 times longer than normal. If noise is produced, it is recommended that you record in normal stereo or LP2 mode to obtain better sound quality.

VOR (Voice Operated Recording)

VOR causes the recorder to automatically record when there is sound, and to pause when there is no sound. This allows you to record without troublesome button operations.



1 Insert a recordable disc and slide MIC SENS to H (high) or L (low).

2 Press REC MODE repeatedly until "STEREO", "LP2", "LP4", or "MONO" lights up in the display.

For details on the recording mode, see "Recording for long times" (page 16).

3 Press ●REC.

4 Press VOR.

VOR turns on.
"VOR" appears in the display and the VOR indicator lights up when the recorder is recording. Both "VOR" and the VOR indicator flash when the recorder is not recording.

To cancel VOR while recording

Press VOR again.
"VOR" and the VOR indicator goes off and the recorder changes to normal recording mode.

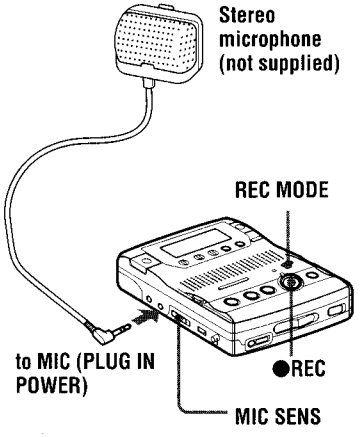
- VOR automatically turns off when you press the ■STOP button to stop recording.
- You can change the recording mode when VOR is on and the recorder is not recording (while "VOR" and VOR indicator flash). A track mark is added each time you press the REC MODE button.

Notes

- You cannot record with the built-in microphones while an optional microphone is connected to the MIC (PLUG IN POWER) jack or an optical cable (not supplied) is connected to the LINE IN (OPTICAL) jack.
- VOR is sensitive to the surrounding sound conditions. Set the MIC SENS switch to H or L to suit the conditions. If you cannot get the desired recording results, cancel VOR and record in manual mode.
- Power from the batteries is consumed as long as VOR is on, even when recording is not taking place (i.e., when "VOR" and the VOR indicator flash.)

Recording from a microphone

Connect a stereo microphone (ECM-717, etc.; not supplied) to the MIC (PLUG IN POWER) jack. The recorder input automatically switches to the externally connected microphone input.



1 Insert a recordable disc and slide MIC SENS to H (high) or L (low).

2 Press REC MODE repeatedly until "STEREO", "LP2", "LP4", or "MONO" lights up in the display.

For details on the recording mode, see "Recording for long times" (page 16).

3 Press ●REC.

For other operations on recording, see "Recording an MD right away!" (page 11).

When using a plug-in-power microphone, no battery is needed for the microphone since power is supplied by the recorder.
If you are using the optional stereo microphone ECM-717, set the switch on the microphone to OFF to allow the recorder to provide power to the microphone. It is recommended that you set the switch on the microphone to OFF during use.

Notes

- You cannot record through the externally connected microphone while an optical cable is connected to the LINE IN (OPTICAL) jack. The recorder automatically selects the recorder input in the following order of priority; optical input, externally connected microphone input, analog (line) input, and built-in microphones input.
- The microphone may pick up the operating sound of the recorder itself (such as the sound of the motor). Use the microphone away from the recorder in such cases. Do not use a microphone with a short connector, as this may cause the operating sound of the recorder to be picked up.

Recording from externally connected equipment

The input jack of this recorder works as both digital and analog input jacks. Connect the recorder to a CD player or a cassette recorder using either digital (optical) input or analog (line) input. To record, see "Recording with digital (optical) input (optical cable required)" (page 20) to record using digital (optical) input and "Recording with analog (line) input (line cable required)" (page 21) to record using analog (line) input.

LINE IN (OPTICAL) jack is for both digital and analog input.

The recorder automatically recognizes the type of line cable and switches to digital or analog input.

Difference between digital (optical) and analog (line) inputs

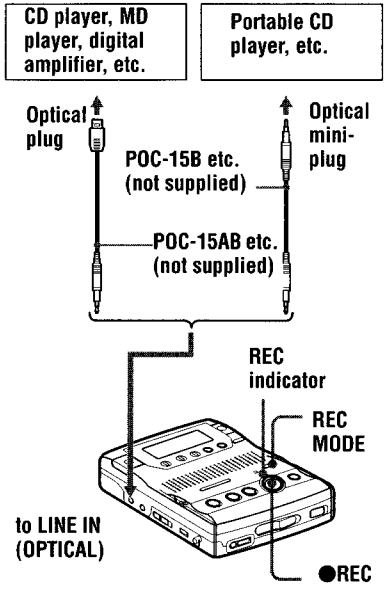
Difference	Digital (optical) input	Analog (line) input
Connectable source	Equipment with an digital (optical) output jack	Equipment with an analog (line) output jack
Usable cord	Optical cable (with an optical or an optical-mini plug)(page 20)	Line cable (with 2 phono plugs or a stereo-mini plug)(page 21)
Signal from the source	Digital	Analog Even when a digital source (such as a CD) is connected, the signal sent to the recorder is analog.
Recorded track numbers	Marked (copied) automatically • at the same positions as the source (when the sound source is a CD or an MD). • after more than 2 seconds of blank or low-level segment (with a sound source other than a CD or an MD) (page 53). • when the recorder is paused while recording (the recorder pauses automatically when it encounters a section with no audio signal for 3 seconds or more) (page 53). You can erase unnecessary marks after recording. ("Erasing a track mark", page 33).	Marked automatically • after more than 2 seconds of blank or low-level segment. • when the recorder is paused while recording. You can erase unnecessary marks after recording ("Erasing a track mark", page 33).
Recorded sound level	Same as the source.	Adjusted automatically.

Note

Track marks may be copied incorrectly:
- when you record from some CD players or multi disc players using digital (optical) input.
- when the source is in shuffle or program play mode while recording using digital (optical) input. In this case, play the source in normal play mode.
- when recording BS or CS programs through digital (optical) input.

Recording with digital (optical) input (optical cable required)

Connect to a digital source using an optical cable (not supplied) to make digital recordings. Digital recording is possible even from digital equipment with different sampling rates, such as a DAT deck or a BS tuner, using the built-in sampling rate converter.



1 Insert a recordable disc.

2 Press REC MODE repeatedly until "STEREO", "LP2", "LP4", or "MONO" lights up in the display.

For details on the recording mode, see "Recording for long times" (page 16).

3 Press ●REC.

"REC" appears in the display, the REC indicator lights up, and the recording starts.

4 Play the source sound.

For other operations on recording, see "Recording an MD right away!" (page 11).

When recording from digital media, track marks in the original are copied automatically to the MD.

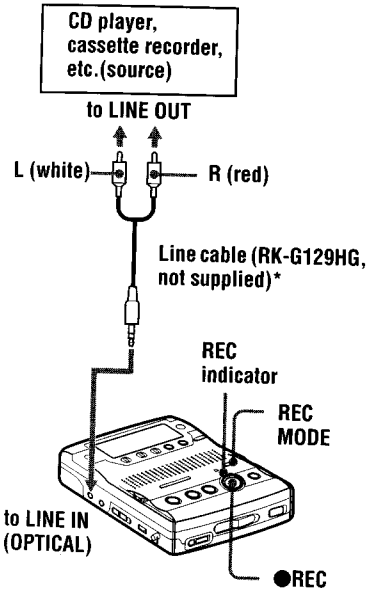
Notes

- You can make a digital recording with an optical cable only from an optical type output.
- When recording from a portable CD player, play it on AC power and disable the anti-skip function (such as ESP*).
- When recording from a portable CD player, pause the CD player before doing the recording procedure.
- Digital output may be disabled on some portable CD players when the AC power adaptor is not connected to the player.
- A track mark is added at the point where you press the ❚❚PAUSE button again to resume recording while pausing recording; thus the remainder of the track will be counted as a new track.

* Electronic Shock Protection

Recording with analog (line) input (line cable required)

Connect the recorder with a line cable (not supplied) to make analog recording. The sound will be sent from the connected equipment as analog signal but will be sent recorded digitally on the disc.



* Use the connecting cords without an attenuator. To connect to a portable CD player having a stereo mini-jack, use the RK-G136HG connecting cord (not supplied).

1 Insert a recordable disc.

2 Press REC MODE repeatedly until "STEREO", "LP2", "LP4", or "MONO" lights up in the display.

For details on the recording mode, see "Recording for long times" (page 16).

3 Press ●REC.

"REC" appears in the display, the REC indicator lights up, and the recording starts.

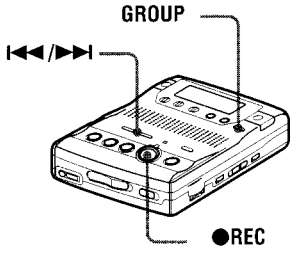
4 Play the source sound.

For other operations on recording, see "Recording an MD right away!" (page 11).

Note

A track mark is added at the point where you press the ❚❚PAUSE button again to resume recording while pausing recording; thus the remainder of the track will be counted as a new track.

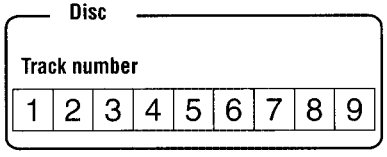
Recording tracks using the Group Function (Group mode recording)



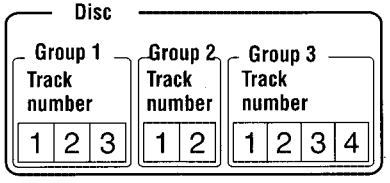
What is the group function (group mode)?

It is a function that allows you to separate tracks on a disc into different groups for playback, recording and editing.

When the Group mode is OFF.



When the Group mode is ON.



It is convenient for managing multiple CD albums recorded in MDLP (LP2 stereo/LP4 stereo) mode onto a single MD.

How is group information recorded?

When recording in group mode, the group information is written to the disc name recording area.
This information consists of text strings that are written as shown in the following example.

Disc name recording area

Example

0;June.26//1-5;Lecture 1//6-9;Lecture 2//

① ② ③

① **Disc name: "June.26"**

② **Group name for tracks 1 to 5: "Lecture 1"**

③ **Group name for tracks 6 to 9: "Lecture 2"**

Therefore, the above character string is displayed in its entirety as the disc name if you load an MD recorded in group mode into a system that does not support group mode, or if you try to edit the contents of a disc on this recorder with the group mode turned off.

Note that if you perform the procedure for "To relabel recordings" of "Labeling recordings" (page 35) and rewrite this character string by mistake, you may be unable to use the group function of that MD.

Note

In group mode, the recorder treats all tracks without group settings as belonging to the last group on the disc. The last group is indicated in the display window on the recorder as "Group --". Within a group, the tracks appear in their order on the disc, not their order within the group.

To activate the group mode (Group mode recording)

To record tracks in group mode, you must first turn the group mode on before the start of recording.

1 Press GROUP for 2 seconds or more.
" 🗀 " lights up in the display and the group mode turns on.
To cancel the group mode, press GROUP for 2 seconds or more again.

Note

The group function setting will be canceled when you eject the MD.

Recording a track into a new group

1 While the recorder is stopped, press GROUP for 2 seconds or more.
" 🗀 " lights up in the display and the group mode turns on.

2 Press ●REC.

3 Play the source sound.

To stop recording, press ■.

The material that was recorded up until ■ was pressed is entered as a new group.

To record a track into another new group.

Turn the group mode off, and then follow steps 1 to 3

Recording a track into an existing group

1 While the recorder is stopped, press GROUP for 2 seconds or more.
" 🗀 " lights up in the display and the group mode turns on.

2 Press GROUP slightly.
" 🗀 " flashes in the display and you can select a group directly (group skip mode) (page 31).

3 Within 5 seconds, press ⏮REVIEW/AMS or ⏭CUE/AMS repeatedly until the group you want the track to belong to appears.

4 Press ●REC.

5 Play the source sound.

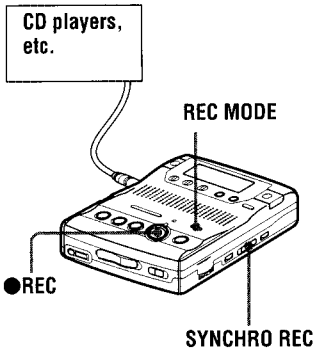
Note

The group skip mode turns off automatically in step 3 if nothing is done within 5 seconds. To continue the procedure, do step 2 again.

- The track will be added at the end of the group.
- For details on the group skip mode, see page 31.
- To add a track that is playing to a group, stop playing the track first, and then do the procedure from step 4.
- If you select "Group --" in step 2, the recorded material will be automatically stored as "Group01".

To start/stop recording in sync with the source player (Synchro-recording)

You can easily make digital recordings of a digital source on an MD.
Before synchro-recording, make connections to the digital source with a digital cable, and insert a recordable MD.



1 Press REC MODE repeatedly until "STEREO", "LP2", "LP4", or "MONO" lights up in the display.

For details on the recording mode, see "Recording for long times" (page 16).

2 Slide SYNCHRO REC to ON.

"SYNC" appears in the display.

Synchro-recording indication

"SYNC" doesn't appear if optical cable is not connected to the LINE IN (OPTICAL) jack on the recorder.

3 Press ●REC.

The recorder stands by for recording.

4 Play the source sound.

The recorder starts recording when it receives the playing sound.

To stop recording

Press ■STOP.

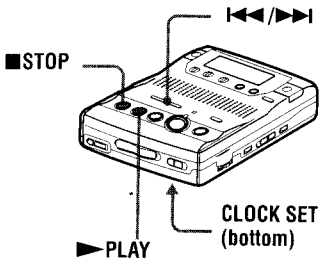
- You cannot pause manually during synchro-recording.
- When there is no sound from the player for more than 3 seconds during synchro-recording, the recorder goes into the standby mode automatically (page 53). When the sound comes from the player again, the recorder resumes synchro-recording. If the recorder is kept in the standby mode for 5 minutes or longer, the recorder stops automatically.

Notes

- Do not switch the SYNCHRO REC switch after step 3. Recording may not be done properly.
- The recording mode setting (stereo, LP2 stereo, LP4 stereo, or monaural) cannot be changed during synchro-recording.
- Even when there is no recorded sound on the sound source (page 53), there may be cases when recording does not pause automatically during synchro-recording due to the noise level emitted from the sound source.
- If a silent portion is encountered for 2 seconds or more during synchro-recording, a new track mark is automatically added at the point where the silent portion ends (page 53).
- Synchro-recording cannot be done if the connecting cord is not an optical cable, or if the cable is connected to the MIC (PLUG IN POWER) jack.
- You cannot change the recording mode during recording.

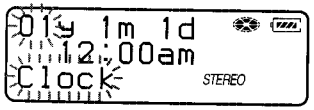
Setting the clock to stamp the recorded time

To stamp the date and time on the MD when you record, you first need to set the clock.



1 Press CLOCK SET at the button of the recorder.

Use a pointed object.
The digits of the year flash.



2 Change the current year by pressing I◄◄ or ►►I.

To change the digits rapidly, keep pressing I◄◄ or ►►I.

3 Press ►PLAY to enter the year.

The digit of the month flashes.

4 Repeat step 2 and 3 to enter the current month, date, hour, and minute.

When you press ►PLAY to enter the minute, the clock starts operating.

If you make a mistake while setting the clock

Press ■STOP, and set the clock again from step 1. You can skip a step by pressing ►PLAY.

To display the current time

When the recorder is not operating or while recording, press DISPLAY repeatedly until the current time appears in the display.

To display the time in the 24-hour system

While setting the clock, press ❚❚PAUSE. To display the time in the 12-hour system, press ❚❚PAUSE again.

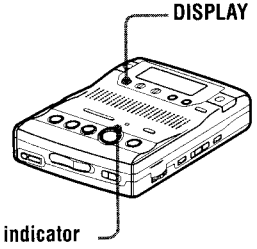
You can also use the SPEED CONTROL dial to set the clock. Turn the dial instead of I◄◄/►►I in step 2, and press the dial instead of ►PLAY in step 3.

Notes

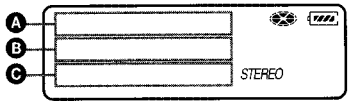
- Make sure the time is correctly set if you want the time stamp to be accurately recorded for an important recording.
- Under normal conditions, the clock may vary by about plus or minus 2 minutes per month.

Checking the remaining time or the recording position

You can check the remaining time, track number, etc. when recording or during stop.
Items related to the group function appear when you play and then stop a track with group settings.



1 Press DISPLAY while the recorder is recording or stopped.
Each time you press the button, the display changes as follows.



While recording

Ⓐ	Ⓑ	Ⓒ
Track number	Elapsed time	—
Track number	Remaining time for recording	RecRemain
Current date	Current time	Clock

In stop mode

Ⓐ	Ⓑ	Ⓒ
Track number	Elapsed time	—
Track name	Remaining time for recording	RecRemain
Group name	Remaining time in the group	GP Remain
Disc name	Remaining time after the current location	AllRemain
Current date	Current time	Clock

Note

Items may appear differently or may not be selectable, depending on the group mode's on/off status, the recorder's operating status, or the recorder settings.

To know the recording condition

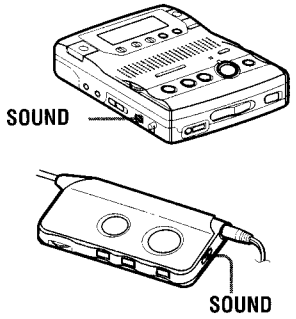
The REC indicator lights up or flashes according to the recording condition.

Recording condition	REC indicator
While recording	lights up
Recording standby	flashes
Less than 3 minutes' recording time available	flashes slowly
A track mark has been added (when controlling by the recorder only)	goes off momentarily

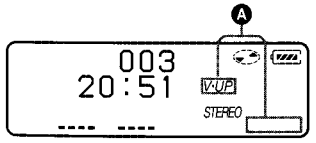
If you want to check the playing position or track name while playing, see page 29.

Changing the sound setting

You can select your desired sound when playing.
This function is effective when using the supplied headphones to listen to stereo recordings.



1 Press SOUND repeatedly.
Each time you press the button, Ⓐ changes as follows.



Ⓐ	Sound setting
— (none)	Factory setting
SOUND 1	Strong bass (Digital Mega Bass 1)
SOUND 2	Stronger bass (Digital Mega Bass 2)
V-UP[1]	Enhancing voice clarity (Voice Up function)

[1] During stereo playback, the Voice Up function emphasizes the left-right orientation of individual voices, making them easier to distinguish and hear. You cannot use the Voice Up function when monaural recording.

To cancel the sound setting

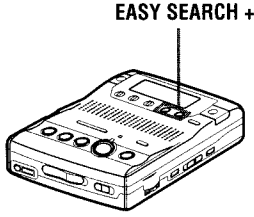
Press SOUND repeatedly until nothing appears in the display.

Notes

- The use of the Voice Up function is not recommended when playing a music disc.
- You cannot set the Voice Up function on monaural recording.
- If sound distortion occurs when you turn the volume up while "SOUND 1" or "SOUND 2", turn the volume down again or change the play mode.
- The setting of "SOUND 1" or "SOUND 2" does not affect the sound being recorded.

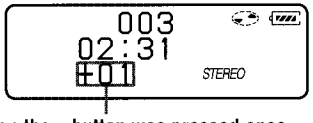
Finding a point quickly (Easy Search)

Use the Easy Search function to find a particular point quickly.

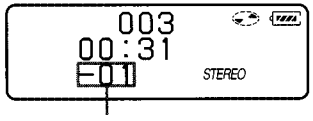


1 Press EASY SEARCH + or – while the recorder is playing or stopped.

Each press of the + button moves the playback point ahead by about one minute. Each press of the – button moves the playback point back about one minute.



When the + button was pressed once. (Playback position moves one minute ahead.)

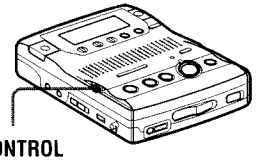


When the – button was pressed once. (Playback position moves one minute behind.)

- The + and – buttons can be pressed up to 20 times each.
- If you reach the beginning of the disc while using the Easy Search function, the recorder will start playing automatically. If you reach the end of the disc while using the Easy Search function, "END" will appear in the display. If this happens, press the ■STOP button to stop the recorder.

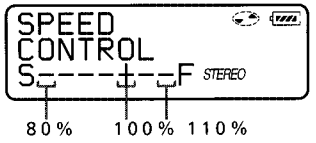
Changing the playback speed (Speed Control)

The playback speed can be adjusted in 7 steps (80%, 85%, ...100%, 105%, 110%).

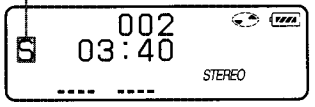


1 Turn the SPEED CONTROL dial while the recorder is playing.

Each turn changes the playback speed. Select your desired speed while listening. "S" appears in the display when playback speed is changed.



Fast Playback indication



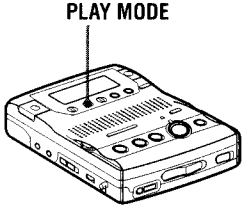
To switch to normal playback

Press the SPEED CONTROL dial.
To change the playback speed again, turn the dial.

- You can pause or find track marks pressing the ❚❚PAUSE, ⏮ REVIEW/AMS or ⏭CUE/AMS button during Fast Playback.

Playing tracks repeatedly

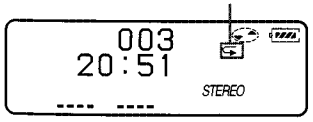
You can play tracks repeatedly in two ways — all repeat and single repeat.



1 Press PLAY MODE while the recorder is playing.

Each time you press the button, the play mode indication changes as follows.

Play mode indication

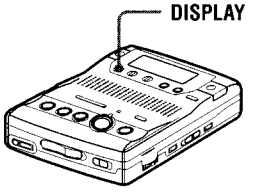


Indication	Play mode
—	All the tracks are played once.
↻	All the tracks are played repeatedly.
↻ 1	A single track is played repeatedly.

- You can specify the playback mode for a selected group when the group mode is on. To activate the group mode, see "Selecting and playing groups (Group skip mode)" (page 31).

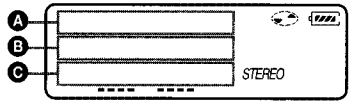
Checking the remaining time or the playing position

You can check the track name, disc name, etc. during playback.
Items related to the group function appear only when the recorder is playing a track with group settings.



1 Press DISPLAY while the recorder is playing.

Each time you press the button, the display changes as follows.



Ⓐ	Ⓑ	Ⓒ
Track number	Elapsed time	— (none)
Track name	Remaining time of the current track	1 Remain
Group name	Remaining time after the current location in the group	GP Remain
Disc name	Remaining time after the current location	AllRemain
Recorded date	Recorded time	RecDate[1]

[1] The recording mode (page 16) of the track appears momentaly after "RecDate" disappears from the display.

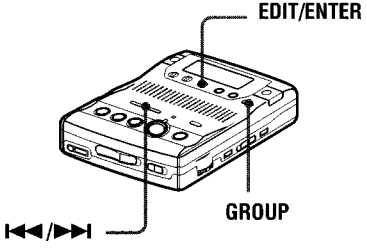
Note

Items may appear differently or may not be selectable, depending on the group mode's on/off status, the recorder's operating status, or the recorder settings.

If you want to check the remaining time or the recording position while recording or in stop mode, see page 26.

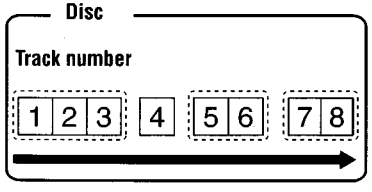
Using the Group Function (Group mode)

The recorder can operate various playback with a disc which has group setting. For more information on the group mode, see "Recording tracks using the Group Function (Group mode recording)" (page 22).

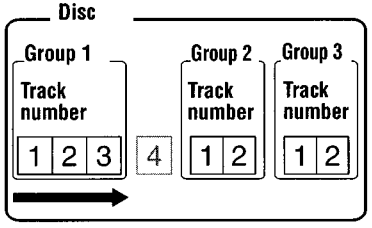


Listening to tracks using the group mode (group mode playback)

Playback when the group mode is off: Playback starts with the first track in the disc, and stops with the last track in the disc.



Playback when the group mode is on: Playback of the selected group starts with the first track in the group, and stops with the last track in the group.



1 Insert a disc which has group settings into the recorder and play the disc.

2 Press GROUP for 2 seconds or more.
"🗀" and "GROUP ON" light in the display up and the group mode turns on.
Playback stops at the end of the last track in the selected group.
For details on selecting another group, see "Selecting and playing groups (Group skip mode)" (page 31).

You can also play the tracks repeatedly in the selected group. After the procedures here, follow the steps of "Playing tracks repeatedly" (page 29).

To turn off the Group function

Press GROUP for 2 seconds or more again.

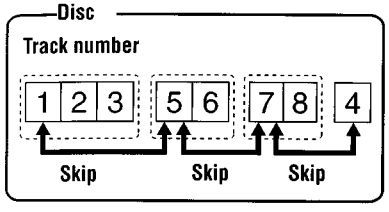
Note

In group mode, the recorder treats all tracks without group settings as belonging to the last group on the disc. The last group is indicated in the display window on the recorder as "Group -". Within a group, the tracks appear in their order on the disc, not their order within the group.

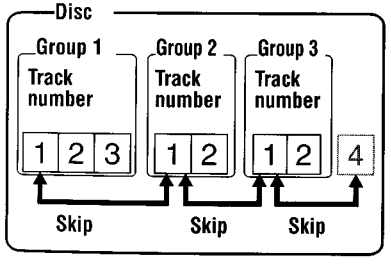
Selecting and playing groups (Group skip mode)

When playing a disc with group settings, the group skip mode allows you to jump from the currently playing group to any other group on the MD. The group skip mode can be used at any time during playback, regardless of whether the player is in group mode on or not.

When the group mode is off:



When the group mode is on:



1 Insert a disc which has group settings into the recorder and play the disc, and then press GROUP slightly.
"🗀" flashes in the display and the group skip mode turns on.

2 Within 5 seconds, press I◄◄REVIEW/AMS/►►ICUE/AMS until your desired group appears, and then press EDIT/ENTER.
The recorder starts playing from the first track in the group.

The group skip mode operates regardless of whether the group mode is on or off.

Notes

- If no operation is performed within 5 seconds after step 1, the group skip mode will be canceled and you will not be able to perform step 2 thereafter. To continue with step 1 at this point, repeat from the beginning of the procedure.
- The group skip mode cannot be used with a disc that has no group settings.

You can edit your recordings by adding/erasing track marks or labeling tracks and MDs. Premastered MDs cannot be edited.

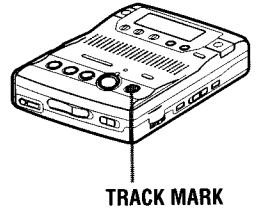
Notes on editing

- You cannot edit tracks on an MD that is record-protected. Before editing tracks, close the tab on the side of the MD (page 54).
- If you perform an editing operation while playing, be sure not to turn the power off until "TOC Edit" disappears in the display.
- Do not move or jog the recorder while "TOC Edit"* is flashing in the display.
- The lid will not open until "TOC Edit" disappears in the display after editing.
- When the group mode is on, editing can be performed only for the tracks registered into the selected group.

* TOC = Table of Contents

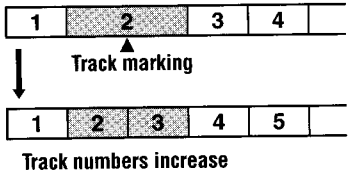
Adding a track mark

You can add two kinds of track marks: regular track marks and special track marks. A total of 254 track marks can be added on one disc.



Track marking to divide a recording

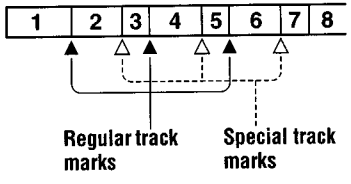
You can add track marks so that the part after the new track mark is counted as a new track.
The track numbers will increase as follows.



1 While recording, playing or pausing an MD, press TRACK MARK at the point you want to mark.
"MARK ON" appears in the display, and a track mark is added. The track number will increase by one.

Track marking important points

While recording, not only can you add regular track marks, you can also add special track marks ("TT"), to mark the position of important points.



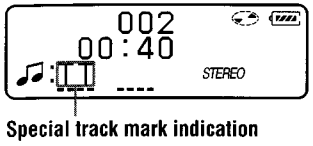
1 Press TRACK MARK on the remote for 2 seconds or more at the desired point while recording.
A special track mark is added and the track number will increase by one. "!MARK ON!" appears in the display and "TT" is automatically added at the beginning of a track name.

Note

Make sure to press the TRACK MARK button for 2 seconds or more, if not, a regular track mark will be added.

To locate special track marks during playback

While pressing down VOR, momentarily press ⏮REVIEW/AMS or ⏭CUE/AMS.
The track number appears after the special track mark indication ("TT").



Press ⏮REVIEW/AMS repeatedly to go to previous special track marks. Press ⏭CUE/AMS repeatedly to go to succeeding special track marks.

To change a regular track mark to a special track mark

After the completion of recording, add "TT" at the beginning of the name of the track you want to change.

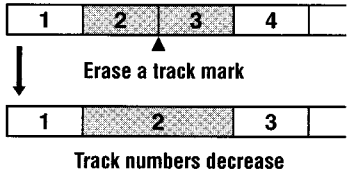
To change a special track mark to a regular track mark

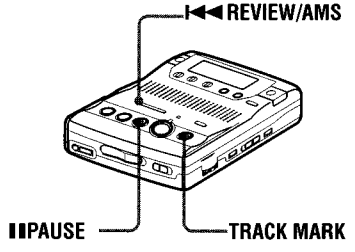
After the completion of recording, erase "TT" at the beginning of the track name or change the name of the track.

Erasing a track mark

When you erase a regular track mark or a special track mark, the track numbers will change as follows.

Example
When combining track 2 and track 3





1 While playing the track with the track mark you want to erase, press ❚❚PAUSE to pause.
To erase the third track mark, play the third track and press ❚❚PAUSE.

2 Find the track mark by pressing ⏮REVIEW/AMS slightly.
Find the beginning of the third track. "00:00" appears in the display. "MARK" appears in the display for 2 seconds.

3 Press TRACK MARK to erase the mark.
"MARK OFF" appears in the display. The track mark is erased and the two tracks are combined.

When you erase a track mark, the date, time, and name assigned to the mark are also erased.

Notes

- When you erase a track mark between the two consecutive tracks that are registered to different groups, the second track is re-registered into the group containing the first track. In addition, if you combine a track that is registered to a group with a track that is not (consecutive tracks), the second track takes the same registration setting as the first track. For example, if the first track is registered to a group, the second track will be registered to the same group as the first track.
- You cannot erase track marks according to the system limitations. For details, see "System limitations" (page 49).

Labeling recordings

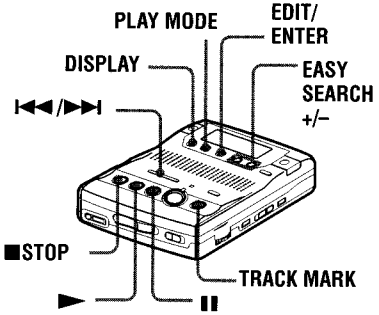
You can name tracks during playback, discs during stop, and both during recording. Each name can be as long as 200 letters.
Each disc can hold up to 1700 alphanumeric letters during playback or stop.
You can enter about 500 alphanumeric characters and symbols during the recording of each track.

Available characters

- Capital and small letters of the English alphabet
- Numbers 0 to 9
- ! " # $ % & ( ) * . ; < = > ? @ _ ` + – ' , / : _ (space)

Notes

- "NAME FULL" appears when you try to enter more than 1,700 characters on a disc. Enter a shorter name for the track, group, or disc, or delete "LP:" from the track name recorded in MDLP mode.
- When labeling a disc which has been recorded using the group function, be sure to turn the group function on to avoid misoverwrite the group information.
- If you enter the symbol "//" between the characters in disc names such as "abc//def", you may be unable to use the group function.



Labeling a disc during stop

To label a disc that contains group settings, you must turn the group mode on before doing the labeling procedure (page 23).

1 Insert a disc.
When a disc is already inserted, mak sure the recorder is stopped.

2 Press EDIT/ENTER.
" : Name" flashes in the display

3 Press EDIT/ENTER again.
The disc is ready to be labeled.

4 Press I◄◄ or ►►I repeatedly to select a letter and press ► to enter.
The selected letter stops flashing and the cursor moves to the next input position.

Press/Turn	Functions
II	To switch between capital letters, small letters, and marks / numbers.
I◄◄ /►►I	To change the letter to the one before / next one.
SPEED CONTROL	To move the cursor to the right (Press slightly) To enter the phrase (Press 1.5 seconds or more) To select a letter (Turn)
EASY SEARCH +/–	To move the cursor to the left or right.
DISPLAY	To insert a blank space to type in a new letter.
PLAY MODE	To delete a letter and move back all following letters to the left.
■STOP	Cancel labeling.

5 Repeat step 4 and enter all characters of the label name.

6 Press EDIT/ENTER.
The track or disc is labeled.

Labeling a track during playback

1 To label a track, insert a disc and play the track you want to label.
To label a group, insert a disc, turn the group mode on, and play the group you want to label (page 30).

2 Press EDIT/ENTER.
The recorder plays the selected track repeatedly.

3 To label a track, press EDIT/ENTER while " : Name" is flashing.
To label a group, press I◄◄ or ►►I repeatedly until " : Name" flashes in the display, and then press EDIT/ ENTER.
The track or group is ready to be labeled.

4 Follow steps 4 to 6 of "Labeling a disc during stop".

Labeling a track or a disc during recording

To label a group, you must first turn the group mode on before the start of recording (page 23).

1 While recording, press EDIT/ ENTER.
" : Name" flashes in the display.

2 To label a track, press EDIT/ENTER while " : Name" is flashing.
To label a group, press I◄◄ or ►►I repeatedly until " : Name" flashes in the display, then press EDIT/ ENTER.
To label a disc, press I◄◄ or ►►I repeatedly until " : Name" flashes in the display, then press EDIT/ENTER.
The track, group, or disc is ready to be labeled.

3 Follow steps 4 to 6 of "Labeling a disc during stop".

To cancel labeling

Press ■STOP.

To relabel recordings

Follow the steps corresponding to the labeling method until the track, group, or disc is ready to be labeled. Enter a new character over the one you want to change, then press the EDIT/ENTER button.

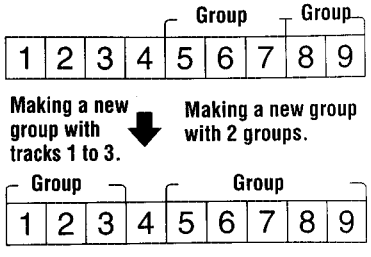
You can also use the SPEED CONTROL dial to select and then enter the menu. Turn the dial (instead of ⏮/⏭) to show the menu items one by one and press the dial (instead of EDIT/ENTER) to enter the selected menu.

Notes

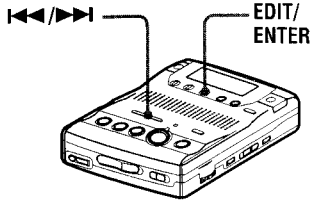
- "LP:" has been added at the beginning of the track name of the track recorded in MDLP mode.
- When the recording is stopped while labeling a track or a disc during recording, or when the playback moves on to the next track while labeling a track, the input at that point is entered automatically.
- When recording through the built-in microphones, the sound of the recorder operations, such as the pressing of buttons, will also be recorded. To avoid this, it is recommended to label a disc or a track after completing the recording.
- You cannot relabel parametrized MDs or label MDs that have not been recorded.
- The recorder is able to display, but cannot label using Japanese "Katakana" characters.
- The recorder cannot rewrite a disc or track name of more than 200 letters that was created by another device.

Registering tracks or groups as a new group (Group setting)

Do the following procedure to register tracks (or groups). A series of tracks (or groups) can be registered by selecting the starting and ending tracks (or groups). The tracks (or groups) must, however, be sequential. If the desired tracks (or groups) are not consecutive, you must move them to make them consecutive before you can register them ("Moving recorded tracks", page 38). This function can be used at any time, whether group mode is on or off.



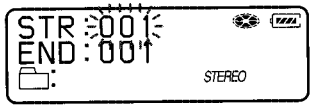
- Registration of non-consecutive tracks is not possible (for example, the 1, 3, 2, 4, 3, 5, 6, 6, 8 and then 9).
- Tracks always appear according to their order on the disc, not their order within the group (even when group mode is on).



1 While the recorder is stopped, press EDIT/ENTER.

2 Press ⏮ or ⏭ repeatedly until "🗀 : Set" flashes in the display, and then press EDIT/ENTER.

"001" flashes in the display.



3 Press ⏮ or ⏭ repeatedly until the number or name of the desired first track flashes in the display, and then press EDIT/ENTER.

This selects the first track of the new group.

Even when the group mode is on, track numbers appear according to their order on the disc, not their order within the group.

4 Press ⏮ or ⏭ repeatedly until the number or name of the desired last track flashes in the display, and then press EDIT/ENTER.

This selects the last track of the new group.

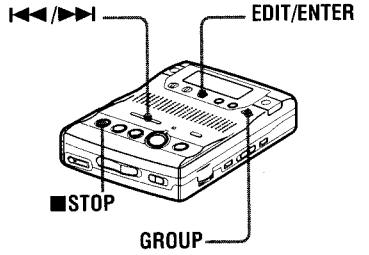
5 Follow steps 4 to 6 of "Labeling recordings" (page 34) to label a group.

You can also use the SPEED CONTROL dial to select and then enter the menu. Turn the dial (instead of ⏮/⏭) to show the menu items one by one and press the dial (instead of EDIT/ENTER) to enter the selected menu.

Notes

- In step 3, the first track must either be the first track of an existing group or a track that does not belong to a group.
- When selecting the last track in step 4, make sure the track comes after the one selected in step 3. The last track must either be the last track of an existing group or a track that does not belong to a group.

To release a group setting



1 Press GROUP for 2 seconds or more.

"🗀" lights up in the display and the group mode turns on.

2 Follow steps 1 and 2 of "Selecting and playing groups (Group skip mode)" (page 31) and check the contents of the group you want to release. Then press ■STOP.

3 Press EDIT/ENTER.

4 Press ⏮ or ⏭ repeatedly until "🗀 : Release" flashes in the display, and press EDIT/ENTER.

"Release?" appears and "PushENTER" flashes in the display.

5 Press EDIT/ENTER.

The group setting of the selected group is released.

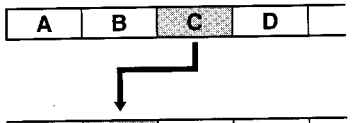
You can also use the SPEED CONTROL dial to select and then enter the menu. Turn the dial (instead of ⏮/⏭) to show the menu items one by one and press the dial (instead of EDIT/ENTER) to enter the selected menu.

Moving recorded tracks

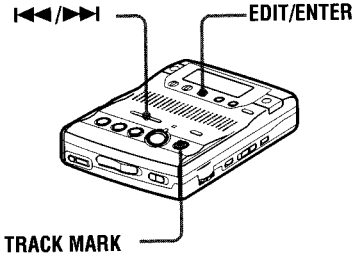
You can change the order of the recorded tracks.

Example
Move track C from the third to the second track.

Before moving



After moving



1 While playing the track you want to move, press EDIT/ENTER.
The recorder plays the selected track repeatedly.

2 Press ⏮ or ⏭ repeatedly until "♫: Move" flashes in the display.

3 Press EDIT/ENTER again.
The selected track number or name of the group that the selected track belongs (when the group mode is turned on) flashes in the display.

4 Press ⏮ or ⏭ repeatedly to select the destination track number.
For the example above, "MV 003 → 002" appears in the display.

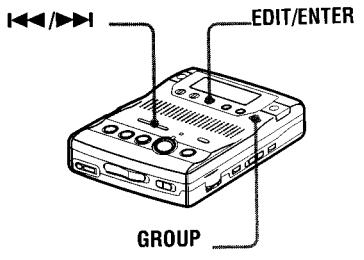
5 Press EDIT/ENTER again.
The track moves to the selected destination track.

To cancel moving

Press ■STOP.

You can also use the SPEED CONTROL dial to select and then enter the menu. Turn the dial (instead of ⏮/⏭) to show the menu items one by one and press the dial (instead of EDIT/ENTER) to enter the selected menu.

Moving a track to a different group



1 Press GROUP for 2 seconds or more.
"🗀" lights up in the display the group mode turns on.

2 While playing the track you want to move, press EDIT/ENTER.
The recorder plays the selected track repeatedly.

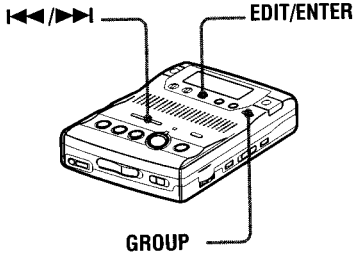
3 Press ⏮ or ⏭ repeatedly until "♫: Move" flashes in the display, and then press EDIT/ENTER.

4 Press ⏮ or ⏭ repeatedly until the destination group flashes in the display, and then press EDIT/ENTER.

5 Press ⏮ or ⏭ repeatedly until the number of the destination track within the group flashes in the display, and then press EDIT/ENTER.

You can also use the SPEED CONTROL dial to select and then enter the menu. Turn the dial (instead of ⏮/⏭) to show the menu items one by one and press the dial (instead of EDIT/ENTER) to enter the selected menu.

Changing the order of a group on a disc (Group move)



1 Press GROUP for 2 seconds or more.
"🗀" lights up in the display and the group mode turns on.

2 While playing a track within a group whose order you want to change, press EDIT/ENTER.

3 Press ⏮ or ⏭ repeatedly until "🗀: Move" flashes in the display, and then press EDIT/ENTER.
You can now move the selected group.

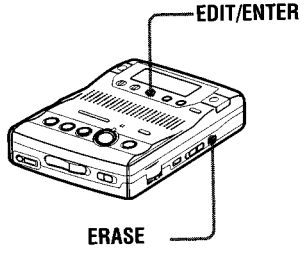
4 Press ⏮ or ⏭ repeatedly to select the destination point on the disc, and then press EDIT/ENTER.

You can also use the SPEED CONTROL dial to select and then enter the menu. Turn the dial (instead of ⏮/⏭) to show the menu items one by one and press the dial (instead of EDIT/ENTER) to enter the selected menu.

Erasing tracks

To erase a track

Note that once a recording has been erased, you cannot retrieve it. Be sure to verify the contents of the track you want to erase.



1 While playing the track you want to erase, press ERASE.
"Erase OK?" and "PushENTER" appear alternately in the display and the recorder plays the selected track repeatedly.

2 Press EDIT/ENTER.
The track is erased and the next track starts to play. All the tracks after the one erased are automatically renumbered.

To cancel erasing

Press ■STOP.

To erase a small section of a track

Pause playback at the point where you want to start erasing. Then do steps 1 and 2.

To erase a part of a track

Add track marks at the beginning and the end of the part you want to erase, then erase the part.

To erase the whole disc

Note that once a recording has been erased, you cannot retrieve it. Be sure to verify the contents of the disc you want to erase.

1. Play the disc you want to erase, verify its contents, and then press ■STOP.
2. While the recorder is stopped, press ERASE.
   "All Erase?" and "PushENTER" appear alternately in the display.
3. Press ⏮ or ⏭ repeatedly until "💿: Erase" flashes in the display, and then press EDIT/ENTER.
   Track name and "All Erase?" light up and "PushENTER" flashes in the display.
4. Press EDIT/ENTER.
   "TOC Edit" flashes in the display, and all the tracks will be erased. When erasing is complete, "BLANKDISC" appears in the display.

To cancel erasing,

Press ■STOP.

To erase a group

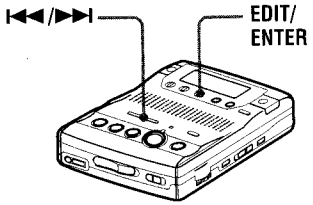
Note that once a recording has been erased, you cannot retrieve it. Be sure to check the contents of the group before you erase it.

1. Press GROUP for 2 seconds or more.
   "🗀" lights up in the display and the group mode turns on.
2. Follow steps 1 and 2 of the procedure described in "Selecting and playing groups (Group skip mode)" (page 31) to check the contents of the group you want to erase. Then press ■STOP.
3. While the recorder is stopped, press EDIT/ENTER, press ⏮ or ⏭ repeatedly until "EDIT" flashes in the display, and then press EDIT/ENTER again.
4. Press ⏮ or ⏭ repeatedly until "🗀: Erase" flashes in the display, and then press EDIT/ENTER.
   The group name and "GP Erase?" appear and "PushENTER" flashes in the display. To cancel erasing, press CANCEL.
5. Press EDIT/ENTER again.
   The group is erased.

💡
You can also use the SPEED CONTROL dial to select and then enter the menu. Turn the dial (instead of ⏮/⏭) to show the menu items one by one and press the dial (instead of EDIT/ENTER) to enter the selected menu.

Adjusting the contrast of the display window (Contrast adjustment)

You can adjust the contrast of the display window on the recorder.

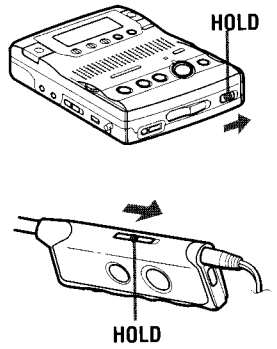


1. While the recorder is stopped, press EDIT/ENTER.
2. Press ⏮ or ⏭ repeatedly until "CONTRAST" flashes in the display, and then press EDIT/ENTER.
3. Press ⏮ or ⏭ repeatedly to adjust the contrast, and then press EDIT/ENTER.

💡
You can also use the SPEED CONTROL dial to select and then enter the menu. Turn the dial (instead of ⏮/⏭) to show the menu items one by one and press the dial (instead of EDIT/ENTER) to enter the selected menu.

Locking the controls (HOLD)

To prevent the buttons from being accidentally operated when you carry the recorder, use this function.



1. Slide HOLD to the direction of the ➡.
   On the recorder, slide HOLD to lock the controls of the recorder. On the remote control, slide HOLD to lock the controls of the remote control. Slide HOLD in the opposite direction of the arrow to unlock the controls.

You can power the recorder not only with alkaline dry battery (not supplied) but also with house current. You cannot, however, use manganese dry battery.

When to replace the batteries

You can check the battery condition with the battery indication which is displayed while using the player. The battery indicator changes as the table below due to the battery condition.
The battery level indicator is approximate.

Battery indicator	Condition
	Battery power decreasing.
(flashing)	Weak battery.
(flashing)	The battery has gone out. "LOW BATT" flashes in the display on the remote control, and the power goes off.

Battery life[1)]

When recording[2)3)]

(Unit: approx.hours)(JEITA[4)])

Recording mode	Approx. hours
Stereo	9
LP2 Stereo	12.5
LP4 Stereo	15
MONO	12

1) The battery life may be shorter due to operating conditions and the temperature of the location.
2) When using a Sony LR6 (SG) "STAMINA" alkaline dry battery (produced in Japan). Recording time may differ according to the alkaline batteries.
3) When recorded with the built-in microphones.
4) Measured in accordance with the JEITA (Japan Electronics and Information Technology Industries Association) standard.

When playing[1)]

(Unit: approx.hours)(JEITA[2)])

Recording mode	Speaker[3)]	Headphones[4)]
Stereo	25.5	34.5
LP2 Stereo	27	39.5
LP4 Stereo	30	43
MONO	30	43

1) When using a Sony LR6 (SG) "STAMINA" alkaline dry battery (produced in Japan).
2) Measured in accordance with the JEITA (Japan Electronics and Information Technology Industries Association) standard.
3) When played using the built-in speaker.
4) When played using headphones.

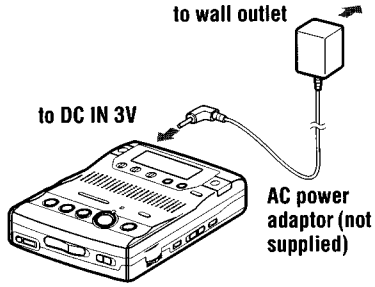
Notes

- Stop the recorder before replacing batteries.
- An optional AC power adaptor is recommended for long recording.

Using house current

1 Connect the AC power adaptor AC-E30HG (not supplied) to DC IN 3V.

2 Connect the AC power adaptor (not supplied) to the wall outlet.



Notes

- For use in your house: Use the AC power adaptor AC-E30HG (not supplied). Do not use any other AC power adaptor since it may cause the recorder to malfunction.

- There are regional differences in AC-E30HG specifications. For this reason, you should verify that the power requirements and plug configuration are appropriate for your area before you purchase the recorder.
- Make sure to connect the AC power adaptor to a wall outlet that is within easy reach, and disconnect it quickly if an unusual condition arises.

Precautions

On safety

Do not put any foreign objects in the DC IN 3V jack.

On power sources

- Use LR6 (size AA) batteries, house current, or car battery.
- The recorder is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the recorder itself has been turned off.
- If you are not going to use this recorder for a long time, be sure to disconnect the power supply (an optional AC power adaptor, dry batteries, or car battery cord). To remove the AC power adaptor (not supplied) from the wall outlet, grasp the adaptor plug itself; never pull the cord.

On heat build-up

Heat may build up in the recorder if it is used for an extended period of time. In this case, leave the recorder turned off until it cools down.

On installation

- Never use the recorder where it will be subjected to extremes of light, temperature, moisture or vibration.
- Never wrap the recorder in anything when it is being used with the AC power adaptor (not supplied). Heat build-up in the recorder may cause malfunction or damage.
- Never carry the recorder together with a hard object within the supplied carrying pouch. Friction with the object may cause flacking or scratching on the recorder's painted surface.

On the headphones

Road safety

Do not use the headphones while driving, cycling, or operating any motorized vehicle. It may create a traffic hazard and is illegal in many areas. It can also be potentially dangerous to play your recorder at high volume while walking, especially at pedestrian crossings. You should exercise extreme caution or discontinue use in potentially hazardous situations.

Preventing hearing damage

Avoid using he headphones at high volume. Hearing experts advise against continuous, loud and extended play. If you experience a ringing in your ears, reduce the volume or discontinue use.

Caring for others

Keep the volume at a moderate level. This will allow you to hear outside sounds and to be considerate of the people around you.

On the MiniDisc cartridge

- When carrying or storing the MiniDisc, keep it in its case.
- Do not break open the shutter.
- Do not place the cartridge where it will be subject to light, extreme temperatures, moisture or dust.
- Attach the supplied MD label only in the space designated for it on the disc. Do not stick it on any other disc surface.

On cleaning

- Clean the recorder casing with a soft cloth slightly moistened with water or a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzene as it may mar the finish of the casing.
- Wipe the disc cartridge with a dry cloth to remove dirt.
- Dust on the lens may prevent the unit from operating properly. Be sure to close the disc compartment lid after inserting or ejecting an MD.

Notes on batteries

Incorrect battery usage may lead to leakage of battery fluid or bursting batteries. To prevent such accidents, observe the following precautions:

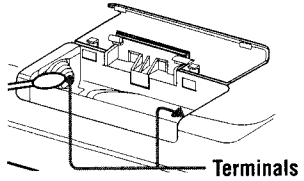
- Insert the + and – poles of the batteries correctly.
- Do not try to recharge dry batteries.
- When the recorder is not to be used for a long time, be sure to remove the batteries.
- If a battery leak should develop, carefully and thoroughly wipe away battery fluid from the battery compartment before inserting new ones.

Note on mechanical noise

The recorder gives off mechanical noise while operating, which is caused by the power-saving system of the recorder and it is not a problem.

Note on maintenance

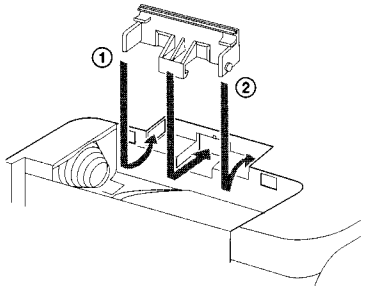
Clean the terminals periodically with a cotton swab or a soft cloth as illustrated.



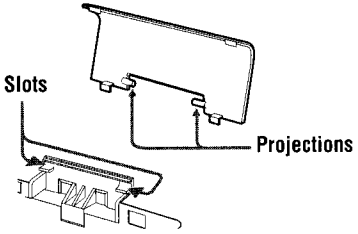
If you have any questions or problems concerning your recorder, please consult your nearest Sony dealer. (If a trouble occurred when the disc was in the recorder, we recommend that the disc be left in the recorder when you consult your Sony dealer so that the cause of trouble may be better understood.)

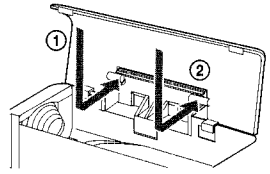
On the battery compartment lid

The battery compartment lid is designed to detach from the recorder when it is handled with great force. Do the following steps to reattach the lid.



1 Insert the projections on the PUSH OPEN tab firmly into the slots on the recorder one at a time.





2 Insert the projections on the lid firmly into the slots on the PUSH OPEN tab one at a time.

Troubleshooting

Should any problem persist after you have made these checks, consult your nearest Sony dealer.

Symptom	Cause/Solution
The recorder does not work or works poorly.	• Audio sources may not be securely connected. ➡ Disconnect the audio sources once and connect them again (pages 20, 21). • The HOLD function is turned on ("HOLD" appears in the display when you press an operation button on the recorder). ➡ Disable HOLD by sliding the HOLD switch in the opposite direction of the arrow (page 41). • Moisture has condensed inside the recorder. ➡ Take the MD out and leave the recorder with the lid opened in a warm place for several hours until the moisture evaporates. • The dry battery is weak (▭ or "LOW BATT" flashes). ➡ Replace the dry battery (pages 9, 42). • The dry battery have been inserted incorrectly. ➡ Insert the battery correctly (page 9). • You pressed a button while the disc indication was rotating quickly. ➡ Wait until the indication becomes normal. • When recording digitally from a portable CD player, you did not use AC power or did not disable the anti-skip function such as ESP (page 20). ➡ Use the portable CD player with AC power or disable the anti-skip function such as ESP. • The analog recording was made using a connecting cord with an attenuator. ➡ Use a connecting cord without an attenuator (page 21). • The AC power adaptor (not supplied) was unplugged during recording or a power outage occurred. • While operating, the recorder received a mechanical shock, too much static, abnormal power voltage caused by lightning, etc. ➡ Restart the operation as follows. **1** Take out the batteries or disconnect all the power sources. **2** Leave the recorder for about 30 seconds. **3** Insert the batteries or connect the power source. • The disc is damaged or does not contain proper recording or editing data. ➡ Reinsert the disc. If this fails, rerecord. • The lid is not firmly closed. ➡ Open the lid and close it again, pressing hard so that it closes firmly. • A disc with no track is inserted ("BLANKDISC" appears when playing or editing). ➡ Replace to another disc. • The record protect tab is opened. ➡ Slide the record protect tab closed.

Symptom	Cause/Solution
The recorder does not record or edit.	• The premastered MD is inserted. ➡ Replace to the recordable MD. • The power source was disrupted during recording or editing. ➡ Rerecord or reedit again.
The ●REC button does not come up. The lid does not open.	• The batteries have been exhausted or the power sources have been disconnected during recording or editing. ➡ Replace the exhausted batteries with new ones or connect the power source again.
No sound comes through the headphones.	• The headphones plug is not firmly connected. ➡ Plug in the plug of the headphones firmly to the remote control. Plug in the plug of the remote control firmly to ∩. • Volume is too low. ➡ Adjust the volume by turning VOL. • Dirty plugs. ➡ Clean the plug on the end of the headphones cord and the plug on the end of the remote control cord.
An MD is not played from the first track.	• Disc playing stopped before it came to the last track. ➡ Press I◀◀ REVIEW/AMS repeatedly or open and close the lid once to go back to the beginning of the disc, and restart playing after checking the track number in the display.
The recorder does not play normally.	• Repeat play is selected. ➡ Press PLAY MODE repeatedly until the ⇆ indication disappears from the display.
Playback sound skips.	• The recorder is placed where it receives continuous vibration. ➡ Put the recorder on a stable place. • A very short track may cause sound to skip. ➡ Try not to create tracks under one second long.
Sound has a lot of static.	• Strong magnetism from a television or such device is interfering with operation. ➡ Move the recorder away from the source of strong magnetism.
Cannot find the track marks.	• You pressed ❚❚PAUSE after pressing I◀◀ REVIEW/AMS or ▶▶I CUE/AMS. ➡ Press ❚❚PAUSE before pressing I◀◀ REVIEW/AMS or ▶▶I CUE/AMS.
The clock loses time or the display flashes. The recording date was not stamped onto the disc.	• The built-in battery for the clock is weak. Note that the clock may gain or lose up to about 2 minutes per month under normal condition. ➡ Insert new dry batteries and leave them for about more than two hours to charge the built-in battery. After charging, set the clock again (page 25). • The clock is not set. ➡ Set the clock (page 25).

Symptom	Cause/Solution
The disc cannot edit on other component.	• The component does not support LP2 stereo or LP4 stereo. ➡ Edit on other component that support LP2 stereo or LP4 stereo.
Momentary noise is heard.	• Due to the special digital audio compression technology used in LP4 stereo mode, momentary noise may occur on very rare occasions with certain sound sources. ➡ Record in normal stereo or LP2 stereo mode.
The group function (group mode/group skip mode) does not operate.	• While using a disc that has no group information, an attempt was made to turn the group mode on ("No Group" appears). ➡ Use a disc with a group information.
The display window is not normal.	• The recorder was disconnected from the power source. ➡ Let the recorder sit for a while, or disconnect the power source, reconnect it, and then press any of the operating buttons.
The recorder skips tracks when you press ⏮/⏭.	• The group skip mode is on. ➡ The group skip mode automatically turns off if no operation is made for 5 seconds.

System limitations

The recording system in your MiniDisc recorder is radically different from those used in cassette and DAT decks and is characterized by the limitations described below. Note, however, that these limitations are due to the inherent nature of the MD recording system itself and not to mechanical causes.

Symptom	Cause
"TR FULL" appears even before the disc has reached the maximum recording time (60, 74, or 80 minutes).	When 254 tracks have been recorded on the disc, "TR FULL" appears regardless of the total recorded time. More than 254 tracks cannot be recorded on the disc. To continue recording, erase unnecessary tracks.
"TR FULL" appears even before the disc has reached the maximum track number or recording time.	Repeated recording and erasing may cause fragmentation and scattering of data. Although those scattered data can be read, each fragment is counted as a track. In this case, the number of tracks may reach 254 and further recording is not possible. To continue recording, erase unnecessary tracks.
Track marks cannot be erased. The remaining recording time does not increase even after erasing numerous short tracks.	When the data of a track is fragmented, the track mark of a fragment under 12 seconds long (recorded in stereo), 24 seconds long (recorded in LP2 stereo mode or monaural mode), or 48 seconds long (recorded in LP4 stereo mode) cannot be erased. You cannot combine a track recorded in stereo and a track recorded in monaural; nor can you combine a track recorded with digital connection and a track recorded with analog connection. Tracks of under 12 seconds, 24 seconds, 48 seconds in length are not counted and so erasing them may not lead to an increase in the recording time.
The total recorded time and the remaining time on the disc may not total the maximum recording time (60, 74, or 80 minutes).	Normally, recording is done in minimum units of approximately 2 seconds (in stereo), 4 seconds (in LP2 stereo mode or monaural mode), or 8 seconds (in LP4 stereo mode). When recording is stopped, the last unit of recording always uses this unit of 2 seconds, 4 seconds, or 8 seconds even if the actual recording is shorter. Likewise, when recording is restarted after the stop, the recorder will automatically insert a blank space amounting to 2 seconds, 4 seconds, or 8 seconds before the next recording. (This is to prevent accidental erasing of a previous track whenever a new recording is started). Therefore, the actual recording time will decrease whenever a recording is stopped; a maximum of 6 seconds, 12 seconds, or 24 seconds compared to the potential recording time for each stop.
The edited tracks may exhibit sound dropout during search operations.	The fragmentation of data may cause sound dropout while searching because the tracks are played in higher speed than normal playback.

Messages

If the following messages flash in the display window, check the chart below.

Error message	Meaning/Remedy
BLANKDISC	• An MD with no recording on it is inserted. ➡ Insert a recorded MD.
BUSY	• You tried to operate the recorder while it was accessing the recorded data. ➡ Wait until the message goes out (in rare cases, it may take 2–3 minutes).
Data Save	• The MD player is recording information (sounds) from the memory to the disk. ➡ Wait until this process is completed. Do not expose the player to any physical shock, nor disrupt power supply.
DISC ERR	• The disc is damaged or does not contain proper recording or editing data. ➡ Reinsert the disc. If this fails, rerecord.
DISC FULL	• There is no more space to record on the disc (less than 12 seconds available). ➡ Replace the disc.
EDITING	• You pressed a key on the recorder while editing on the remote control.
Hi DC in	• Voltage of the power supply is too high (The recommended AC power adaptor or the recommended car battery cord is not used). ➡ Use the recommended AC power adaptor (not supplied) or the car battery cord (not supplied).
HOLD	• The recorder is locked. ➡ Slide HOLD against the arrow to unlock the recorder (page 41).
LOW BATT	• Batteries are weak. ➡ Replace the dry batteries (pages 9, 42).
MEM OVER	• You tried to record with the recorder placed where it receives continuous vibration. ➡ Put the recorder on a stable place, and start recording again.
MENU	• You pressed a key on the remote control while selecting a menu on the recorder.
NAME FULL	• You tried to enter more than 200 letters to label a single track or disc. • You tried to enter a total of more than 1700 letters for track or disc names during playback or stop. ➡ Enter a shorter name for the track, group, or disc (page 34), or delete "LP:" from the track name recorded in MDLP mode.
NO COPY	• You tried to make a copy from a disc that is protected by the Serial Copy Management System. You cannot make copies from a digitally connected source which was itself recorded using digital connection. ➡ Use analog connection instead (page 21).
NO DISC	• You tried to play or record with no disc in the recorder. ➡ Insert an MD.
No Group	• You tried to turn the group function on with a disc witch has no group information. ➡ Use a disc witch the group information has been recorded.
NO SIGNAL	• The recorder could not detect digital input signals. ➡ Make sure that the source is connected firmly (page 20).
P/B ONLY	• You tried to record or edit on a premastered MD (P/B stands for "playback"). ➡ Insert a recordable MD.
PROTECTED	• You tried to record or edit on a MD with the tab in the record-protect position (page 54). ➡ Slide the tab back.
SORRY	• You tried to erase the track mark at the beginning of the first track. • You tried to erase a track mark to combine tracks the recorder cannot combine (a track recorded in stereo and in mono, for example). • You tried to press ❚❚PAUSE or TRACK MARK during synchro-recording. • You tried to release the group for "Group --".
TEMP OVER	• Heat has built up in the recorder. ➡ Let the recorder cool down.
TOC Edit	• The MD player is recording information (track start and end position) from the memory to the disk. ➡ Wait until this process is completed. Do not expose the player to physical shock, nor disrupt power supply.
TR FULL	• There is no more space for new data when you are editing the MD. ➡ Erase unnecessary tracks (page 39).
TrPROTECT	• You tried to record or edit a write-protected track that was recorded on other device. ➡ Record or edit on other tracks.

Specifications

System
Audio playing system
MiniDisc digital audio system
Laser diode properties
Material: GaAlAs
Wavelength: λ = 790 nm
Emission duration: continuous
Laser output: less than 44.6 μW
(This output is the value measured at a distance of 200 mm from the lens surface on the optical pick-up block with 7 mm aperture.)
Recording and playback time
When using MDW-80
Maximum 160 min. in monaural.
Maximum 320 min. in stereo
Revolutions
350 rpm to 2,800 rpm (CLV)
Error correction
ACIRC (Advanced Cross Interleave Reed Solomon Code)
Sampling frequency
44.1 kHz
Sampling rate converter
Input: 32 kHz/44.1 kHz/48 kHz
Coding
ATRAC (Adaptive TRansform Acoustic Coding)
ATRAC3 — LP2/LP4
Modulation system
EFM (Eight to Fourteen Modulation)
Speaker
28 mm ($1^1/_8$ in.) dia.
Frequency response (digital/analog input)
20 to 20,000 Hz ± 3 dB
Wow and Flutter
Below measurable limit
Inputs
Microphone: stereo mini-jack
(minimum input level 0.25 mV)
Line in[1]:
stereo mini-jack for analog input
(minimum input level 39 mV)
optical (digital) mini-jack for optical (digital) input
Outputs
🎧: stereo mini-jack (dedicated remote control jack)
Maximum output (DC)[2]
Headphones: 5 mW + 5 mW (16 ohm)
Speaker: 70 mW

General
Power requirements
DC 3V
LR6 (size AA) alkaline dry battery (world model only)
Battery operation time
See "Battery life" (page 42)
Dimensions
Approx. 105.7 × 80.0 × 24.9 mm (w/h/d)
($4^1/_4 \times 3^1/_8 \times 1$ in.) not incl. projecting parts and controls.
Mass
Approx. 160 g (5.7 oz) (main unit only)
Supplied accessories
Remote control (1)
Headphones (1)
Carrying pouch (1)
Hand strap (1)
Sony LR6 (size AA) alkaline dry battery (world model only) (1)

[1] The LINE IN (OPTICAL) jack is used to connect either a digital (optical) cable or a line (analog) cable.
[2] Measured in accordance with JEITA.

Optional accessories
AC power adaptor AC-E30HG
Optical Cable POC-15B, POC-15AB
Line Cable RK-G129HG, RK-G136HG
Stereo Microphones ECM-717
Recordable MDs MDW-series
Foot control unit FS-85B50
Headphones* MDR-EX70LP, MDR-E838LP
* When using optional headphones, use only headphones with stereo mini plugs. You cannot use headphones with micro plugs.

Your dealer may not handle some of the above listed accessories. Please ask the dealer for detailed information about the accessories in your country.

US and foreign patents licensed from Dolby Laboratories.

Design and specifications are subject to change without notice.

Explanations

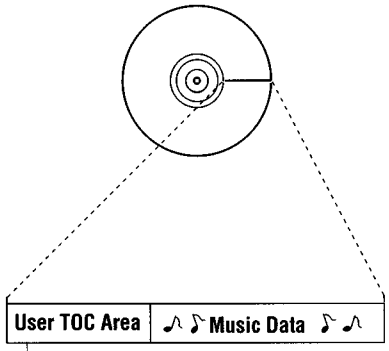
What is the newly developed DSP TYPE-R for ATRAC?
"TYPE-R" is a high-level Sony specification used in the Digital Signal Processor (DSP), which is heart of the MiniDisc sound. This technology gives the MiniDisc recorder twice the signal processing capability as previous MiniDisc Walkman models, producing a sound quality close to that of MiniDisc decks.

How the MiniDisc got so small
The 2.5-inch MiniDisc, encased in a plastic cartridge that looks like a 3.5-inch diskette (see illustration on the left column), uses a new digital audio compression technology called ATRAC (Adaptive TRansform Acoustic Coding). To store more sound in less space, ATRAC extracts and encodes only those frequency components actually audible to the human ear.

The meaning of "no sound"
"No sound" describes a recorder condition in which the input level is about 4.8 mV during analog input or less than –89 dB during optical (digital) input (with 0 dB as full bit (the maximum recordable level for a MiniDisc)).

Quick Random Access
Like CDs, MDs offer instantaneous random access to the beginning of any music track. Premastered MDs are recorded with location addresses corresponding to each music selection.

Recordable MDs are manufactured with a "User TOC Area" to contain the order of the music. The TOC (Table of Contents) system is similar to the "directory management system" of floppy disks. In other words, starting and ending addresses for all music tracks recorded on the disc are stored in this area. This lets you randomly access the beginning of any track as soon as you enter the track number (AMS), as well as label the location with a track name as you would a file on a diskette.



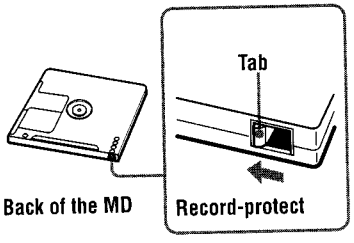
Contains the order and start/end points of the music.

Shock-Resistant Memory
One major drawback of optical read systems is that they can skip or mute when subjected to vibration. The MD system resolves this problem by using a buffer memory that stores audio data.

To protect a recorded MD

To record-protect an MD, slide open the tab at the side of the MD. In this position, the MD cannot be recorded. To record again, slide the tab back so the tab is visible.

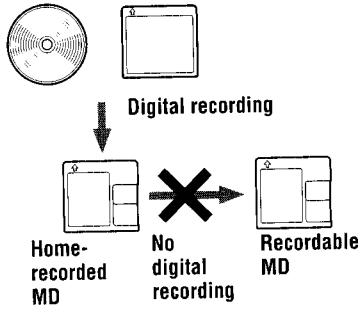
When the disc is record-protected



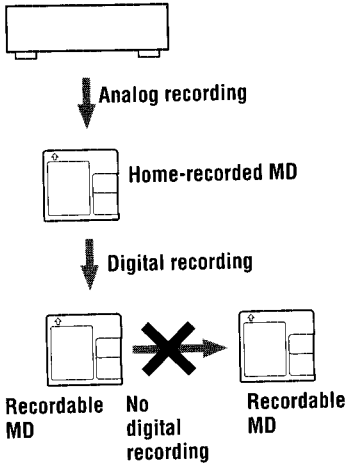
Note on digital recording

This recorder uses the Serial Copy Management System, which allows only first-generation digital copies to be made from premastered software. You can only make copies from a home-recorded MD by using the analog (line out) connections.

Premastered software such as CDs or MDs.



Microphone, record player, tuner, etc (with analog output jacks).



If you have any questions or problems concerning your recorder, please consult your nearest Sony dealer. (If a trouble occurred when the disc was in the recorder, we recommend that the disc be left in the recorder when you consult your Sony dealer so that the cause of trouble may be better understood.)